AR23

# 1977 ANNUAL REPORT

## 31 DECEMBER 1977

MCDONNELL DOUGLAS CORPORATION

## HIGHLIGHTS

| YEARS ENDED 31 DECEMBER Consolidated | 1977 | 1976 |
|---|---|---|
| Sales | $3,544,798,168 | $3,543,713,215 |
| Net earnings<br>As % of sales | $122,958,128<br>3.47% | $108,855,242<br>3.07% |
| Earnings per share | $3.20 | $2.85 |
| Cash dividends declared | $18,403,209 | $16,062,644 |
| Shareholders' equity per share on 31 December | $28.53 | $25.73 |
| Working capital on 31 December | $686,117,864 | $675,491,513 |
| Firm backlog on 31 December (see page 24) | $4,626,800,000 | $2,988,079,000 |
| Personnel on 31 December | 61,577 | 57,867 |

## TO SHAREHOLDERS AND CO-WORKERS

### INTRODUCTION

Our firm backlog, shown in the Highlights above, increased 55% in 1977. On 31 December 1977 our total backlog was at a record high of approximately $6,997,686,000.

Our backlog was favorably affected by a general increase in air travel in 1977 and resulting airline orders for new equipment.

The DC-10 jetliner program was helped also by the U.S. Air Force's selection of a modified DC-10 for use as an advanced tanker/cargo aircraft. For details on the financial status of DC-10 aircraft in process, information about deferred costs, and market and cost assumptions, see Note C on page 17.

The longstanding acceptance of the DC-9 among the world's airlines was given new impetus in 1977 by our decision to start production of a new, more economical, uniquely quiet Super 80 version.

MDC delivered 36 jetliners in 1977 — the smallest number of such deliveries since 1965 and probably the low point in what has been a pronounced decline covering several years. Current backlog and the general outlook indicate that 1978 should be substantially higher, and that 1979 and 1980 should also be strong.

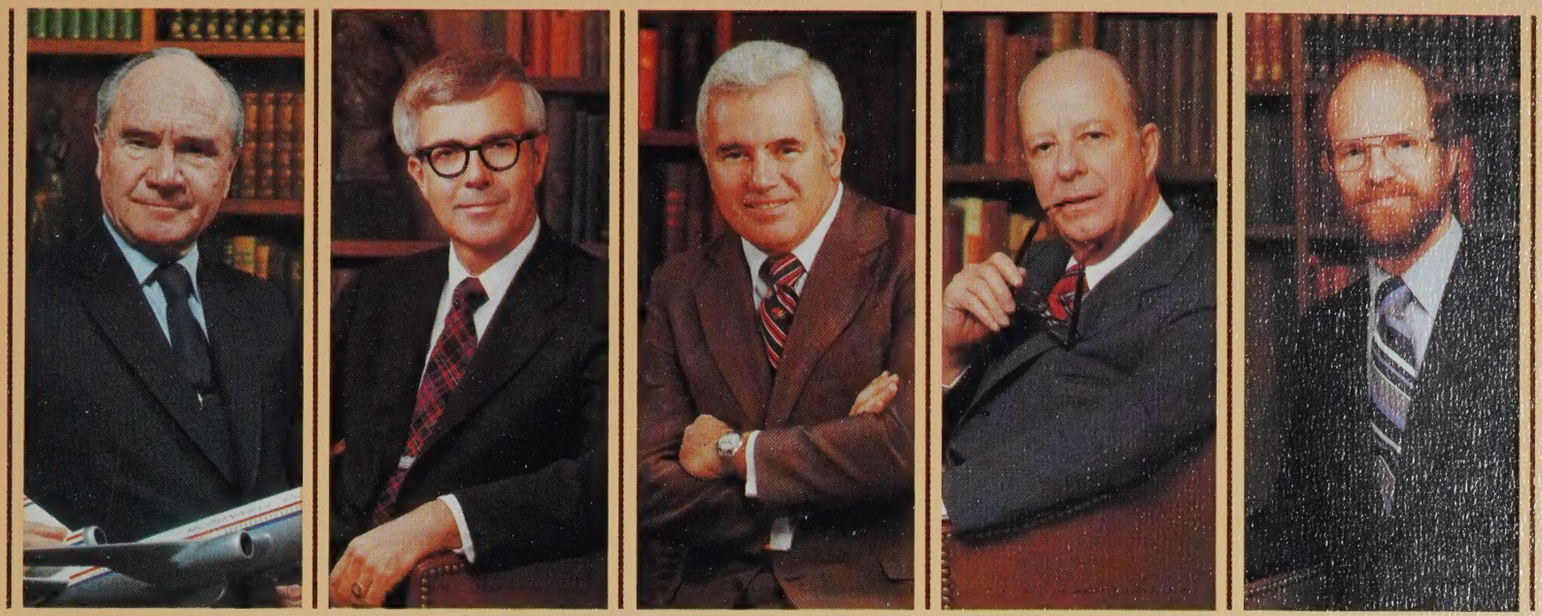
The airline industry remains subject to general economic conditions, and the economic outlook is unclear. This situation is complicated by the unresolved question of whether — or how — airline passenger service is to be deregulated. Overall, however, prospects for MDC's jetliner programs are more encouraging now than a year ago.

Our government business continues to be excellent. While federal budgetary pressure could affect the future of several of our principal programs, MDC continues to be a source of support to U.S. efforts to maintain peace through strength.

Two new combat aircraft, the F-18 Hornet and the AV-8B Advanced Harrier, will make their first flights in 1978. We have three combat aircraft in production: the F-15 Eagle, the F-4 Phantom, and the A-4

◀Cover: Artist's concept of new MDC Advanced Tanker/Cargo Aircraft refueling F-15 Eagle.

**EXECUTIVE COMMITTEE OF BOARD OF DIRECTORS**



**JAMES S. MCDONNELL**
*Chairman, Board of Directors*

**SANFORD N. MCDONNELL**
*President and Chief Executive Officer*

**GEORGE S. GRAFF**
*President, McDonnell Aircraft Company*

**WILLIAM R. ORTHWEIN, JR.**
*President, McDonnell Douglas Automation Company*

**JOHN F. MCDONNELL**
*Corporate Executive Vice President*

Skyhawk. The 5000th Phantom is scheduled for delivery in early summer.

Sales in 1977 were divided between 77% government and 23% commercial business. Exports of $1,128,579,282 represented 32% of sales and included 42% commercial and 58% government business.

On 13 January 1978 MDC employes belonging to the United Auto Workers began a strike at Long Beach, Calif., and Tulsa, Okla.. As of this writing they have not yet voted to return to work. Depending upon its duration, this strike will affect commercial aircraft delivery schedules and results for 1978. Labor union agreements in effect for personnel at our St. Louis facilities are due to expire in May.

The number of personnel on the MDC payroll was 61,577 on 31 December 1977. This was 6.4% higher than the 57,867 total a year earlier, and represented the first year-end to year-end increase in 10 years.

The SEC and IRS investigations which we have previously reported to shareholders have continued and some foreign commission payments are being examined in addition to the $2.5 million previously reported. Additionally, the Federal Trade Commission and the Department of Justice have commenced their own investigations of foreign payments by many American companies including MDC. We believe that the results of these investigations will not have a material effect on the financial position or reported earnings of MDC.

At the end of 1977 we had cash and short-term investments of almost $400 million, no short-term bank debt, and long-term debt of less than $80 million. A solid financial position is essential for leadership in aerospace. It will help us to invest in the facilities, the research and development, and the new programs necessary for success — and for continued ability to provide jobs — in the years ahead.

In January 1978 the Board of Directors increased the dividend for the third year in a row. The new rate for the April 1978 dividend is 15 cents, 20% above the previous rate.

F-15 Eagle air superiority fighters at Langley Air Force Base

## MILITARY AIRCRAFT

The U.S. Air Force's selection of a modified DC-10 convertible freighter as an advanced tanker/cargo aircraft (ATCA) in 1977 brought with it a $28 million contract for the start of production engineering and long-lead procurement. Though the number of ATCAs to be procured is not yet known, it is expected that a substantial number will eventually be ordered by the Air Force. The aircraft will be produced at Long Beach, Calif., and program plans call for the first delivery to be made late in 1980.

The DC-10 ATCA will enhance U.S. air mobility by combining aerial refueling and cargo airlift capability. It will perform missions now requiring two types of aircraft in deploying fighter squadrons and their unit support equipment.

The Japan National Defense Council has approved the Japan Defense Agency's selection of the F-15 Eagle.

ACES II ejection seats in production

From Top: Harrier, Phantom and Two Skyhawks

F-18 Hornet development fixture

This decision, subject to acceptance by the Japanese Diet, would lead to F-15 deliveries in 1980 and ultimately to production of F-15s in Japan.

The Israeli Air Force, the Eagle's first foreign user, continued to take deliveries last year. Canada and Australia also are evaluating the F-15 for possible use in modernizing their fighter forces.

By the end of 1977 more than 255 F-15s were in service with the U.S. Air Force, which plans to buy 749 of the twin-engine aircraft. Congress voted $1,593,300,000 in fiscal 1978 funds for the purchase of 97 Eagles; this sum includes $69,600,000 for fiscal 1979 long-lead work. All of these planes will include the PEP 2000 package — internal fuel capacity increased by 2000 pounds plus fittings for FAST PACK conformal pallets capable of carrying an additional 10,000 pounds of fuel and significantly increasing the F-15's global mobility.

Full-scale development of the F-18 Hornet naval strike fighter continued in 1977 as the first metal was cut and major assembly began on the first of 11 test aircraft. The U.S. Navy conducted a formal review of the Hornet development fixture, a non-flying structural representation used for checking the form and fit of all equipment. Canada and Australia are both evaluating the Hornet.

Design of a prototype AV-8B, a proposed advanced version of the U.S. Marine Corps' V/STOL (Vertical/Short Takeoff and Landing) Harrier, has been completed. Modifications began on schedule to convert two early-model Harriers to AV-8B configuration, and fabrication of an advanced technology graphite/epoxy wing for the prototype is to be completed in the spring of 1978. It is not certain that this aircraft will be budgeted for production.

A total of 4,970 F-4 Phantoms had been built in St. Louis by the end of 1977, and Japan had built another 101 under license. An additional 92 Phantoms were on order for foreign countries at year-end, and deliveries are expected to continue into late 1979.

Production of MDC's ACES II Advanced Concept Ejection Seat began at Long Beach in 1977 under a contract for 441 seats to be installed in F-15 Eagle, F-16 and A-10 tactical aircraft. The ACES II system is effective from ground level to 50,000 feet and from zero airspeed to 600 knots.

The 2900th A-4 Skyhawk, another Long Beach product, was delivered in 1977. The aircraft has been in production more than 25 years, longer than any other U.S. combat plane.

The U.S. Air Force's advanced medium STOL (Short Takeoff and Landing) program, in which MDC's YC-15 was a candidate for selection and production, was not in the Administration budget submitted to Congress in January 1978. Our corporation has been a leader in STOL development for many years, and we remain confident that uses may be found for this outstanding aircraft.

Winter Scene: DC-10 Series 10 jetliners at Chicago's O'Hare airport

## COMMERCIAL AIRCRAFT

We announced in October our decision to begin production of the DC-9 Super 80, the newest, largest, and most fuel-efficient version of our twin-jet airliner. The Super 80 will carry from 135 to 172 passengers and will utilize a new "dash 209" version of the Pratt & Whitney JT8D engine. When it enters airline service in 1980 it will, as the quietest jetliner in production in the world, help to ease noise problems near airports. To airlines it will offer increased range, reduced fuel consumption and improved seat-mile economics.

Firm orders for 27 Super 80s have been received from Swissair, Austrian Airlines and Southern Airways. Conditional orders for five others have been received.

Twenty-two DC-9s were delivered in 1977, compared with 50 (including four military models) the previous year. The decline resulted from the low rate at which jetliners were being ordered in 1976. Firm orders for 51 DC-9s were received in 1977, and British West Indian Airways became the newest operator by taking delivery of the first two of three DC-9s it has ordered. DC-9s are now in service with 42 airlines, three governments and four other operators.

At year-end MDC had firm orders for 926 DC-9s and conditional orders and options for 46 others, bringing the overall total to 972 aircraft of which 871 had been delivered.

As of 31 December the DC-9 fleet was averaging 6,000 flights and 300,000 passengers daily, serving 557 cities around the world. Since entering revenue service in 1965, DC-9s had carried 930 million passengers a total of 260 billion revenue passenger miles.

In 1977 MDC received firm orders for 29 DC-10s. Among airlines placing these orders were five new customers: World Airways, Singapore Airlines, Jugoslovenski Aerotransport, Balair, and CP Air. Reorders were announced by American Airlines, Western Airlines, VIASA, Japan Air Lines, Martinair, British Caledonian, and Nigeria Airways. The DC-10 has now been selected by 41 airlines.

Fourteen DC-10s were delivered during the year, compared with 19 the previous year. As with the DC-9, this decline reflected the impact of recession on orders placed in the mid-1970s. Thai Airways International and British Caledonian took delivery of their first DC-10s in 1977.

At year-end MDC had firm orders for 275 DC-10s and conditional orders and options for 31 others, bringing the overall total to 306 aircraft of which 245 had been delivered.

As of 31 December the DC-10 fleet was averaging 740 flights and 117,000 passengers daily, serving 162 cities

Wind tunnel model of DC-9 Super 80

A newly converted DC-8 freighter

around the world. Since entering revenue service in 1971, DC-10s had carried 150 million passengers a total of 190 billion revenue passenger miles.

In 1977 MDC's Tulsa facility continued to convert DC-8 jetliners to freighters by removing passenger service equipment, installing new floors and cargo doors, and in some cases installing fanjet engines. Transmeridian Air Cargo, Ltd., International Air Service Co., Ltd., and Overseas National Airways, Inc., all took delivery of converted DC-8s in 1977.

## ASTRONAUTICS

Early in 1978 we received a U.S. Navy authorization for more than 300 Harpoon anti-ship missiles and support equipment. This brings Harpoon bookings from the Navy and several friendly foreign nations to a total of more than 1300 missiles — and more than $1 billion — since the program began in 1971.

Harpoon was given provisional approval for service use after successfully completing operational evaluation by the Navy last spring. Several ships including a nuclear attack submarine, a cruiser and fast frigates have been equipped with Harpoon. An air-launched version is moving toward operational service.

Throughout 1977 we continued development of the MDC guidance system for cruise missiles. Flight testing demonstrated the accuracy of this system, which will guide both the U.S. Navy's Tomahawk cruise missile and the Air Force's air-launched version in additional tests scheduled for 1978.

A new systems technology test facility that we are operating in our role as contractor for the U.S. Army's Ballistic Missile Defense Systems Technology Program (STP) was completed in 1977 at the Kwajalein Missile Range in the South Pacific. In June, 30 days ahead of schedule, the test facility's advanced phased array radar and related computers and data processors were used to search for, detect and track a missile reentry vehicle launched 5000 miles away in California. Testing will continue through 1978, with increasingly more difficult targets used to demonstrate the facility's capabilities. STP's purpose is to provide the U.S. with the advanced technology needed for defense against refined ballistic missile threats.

In November we received a $6.9 million contract modification to perform preliminary engineering studies on a "layered" ballistic missile defense system. These studies will involve the technical investigation of possible advanced ways of detecting and counteracting attacking missiles both above and within the atmosphere of the earth.

In 1977 — its eighteenth year as NASA's principal unmanned space launch vehicle — our Delta rocket placed nine scientific, communications and weather-watching satellites in orbit. Eight of these were launched for international organizations and foreign governments.

A Delta launch failure in September has been traced to equipment not built by MDC and was followed in the fourth quarter by three consecutive successes that carried a pair of earth-sun explorer satellites, a METEOSTAT weather observer and a Japanese communications satellite. At year-end Delta's record was 126 successes in 137 flights since 1960. Production continues for launches scheduled into 1982.

Development continued on two Payload Assist Modules, solid propellant rocket systems to be used as secondary boosters sending satellites into higher orbit after they have been carried to low earth orbit by the new Space Shuttle vehicle.

The smaller of the two, PAM-D, can be used as the third stage of a Delta rocket and gives satellite operators the option of using either Delta or Shuttle as the latter enters service in the early 1980s. The larger PAM-A will enable the Shuttle system to transfer to high orbit those heavier payloads presently launched on Atlas/Centaur vehicles.

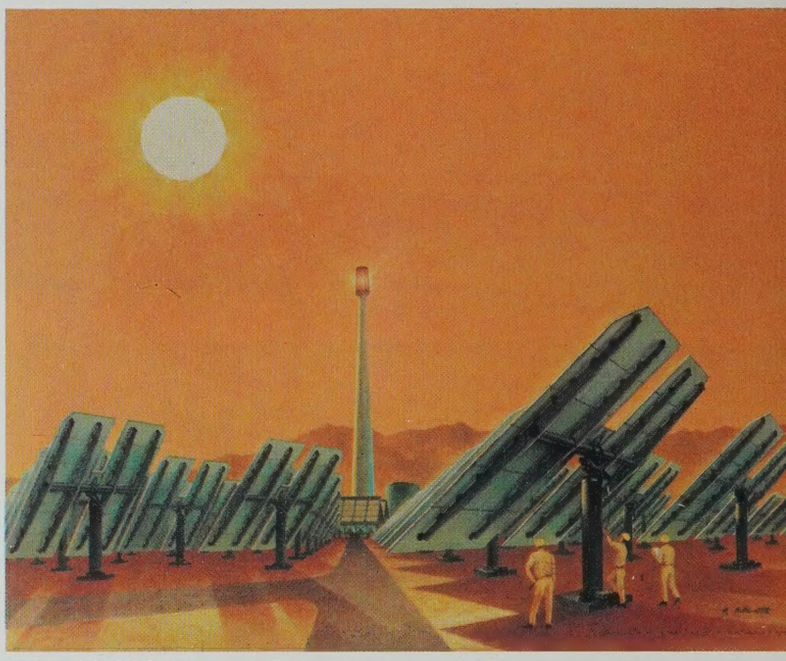
Both PAM stages are MDC-funded commercial developments implemented under agreements with NASA. At the end of 1977 contracts were being negotiated for use of the PAM-D module on numerous launches, and a contract from NASA for six PAM-A vehicles with options for two more has assured full amortization of the larger module's development cost.

In August the U.S. Department of Energy selected our design for a 10,000-kilowatt solar power plant that will use mirrors to concentrate heat on a boiler atop a high tower in the California desert. In 1978 we will be bidding on the prime contract for the overall design integration of this pilot plant and fabrication of sun-tracking mirrors.

An MDC prototype for another method of gathering heat from the sun — this one using lenses to focus heat on a pipe filled with liquid — was delivered to the Department of Energy for tests that were completed late in 1977.

We are developing a flying fire-fighting rescue vehicle that can carry firemen to high-rise buildings or deliver emergency crews and equipment to other inaccessible areas. Called a Suspended Maneuvering System (SMS) and combining technology from our space and aircraft programs, the vehicle is suspended by cable from a helicopter and has its own propulsion system for maneuvering in and out of hard-to-reach areas. A prototype will be flight tested in 1978.

Harpoon missile manufacturing



MDC 10,000 kilowatt Solar Power Concept

## AUTOMATION

For the first time in its 17-year history, McDonnell Douglas Automation Company (MCAUTO®) in 1977 had commercial revenues of more than $100 million. Total revenue for the year was $237,110,428, an increase of 25% over 1976. Data processing services performed for 2200 commercial clients — those outside the MDC family of companies — produced $111,737,343 in revenue, up 45% from the previous year.

Sixty-three per cent of the commercial revenue came from work involving transmission of data between 4600 terminals installed in the offices of our clients

MCAUTO's Hospital Services Division is expanding its St. Louis headquarters

Scene from inside VITAL Visual Simulation System

and MCAUTO's large-scale computers in St. Louis, Long Beach and Denver.

Our Hospital Services Division continues to be the nation's largest supplier of data processing for health care institutions. At the end of 1977, 427 hospitals with more than 88,000 beds in 41 states were under contract with MCAUTO for financial record keeping and statistical reporting.

Our experience in providing sophisticated computer software to large firms engaged in manufacturing and distribution has been applied during the past year to the development of systems tailored to the needs of small and middle-sized firms. These systems cover all phases of the manufacturing and distribution cycle and include such activities as designing products by computer, ordering raw materials and maintaining shipment schedules.

The communications industry continues to be an important source of business, with telephone companies and other firms using MCAUTO services including computerized scheduling of operators, production of directories, and business planning. In 1977 two insurance companies and a self-insured manufacturer began using our programs to pay medical and dental claims at a rate of more than one million claims annually.

At the end of 1977 MCAUTO had 103 computers and associated supporting equipment valued at $254,290,846, more than 4300 personnel, and 52 offices in 43 cities and 27 states.

## ELECTRONICS

**MDEC.** Orders worth $12 million were received by McDonnell Douglas Electronics Company in 1977 for 27 VITAL visual simulation systems for the training of military and commercial flight crews. This raised to 85 the total number of systems ordered, and a new fourth-generation VITAL with a capability for creating dusk-like scenes has been delivered to its first customer. MDEC has also demonstrated a simulation and display system with potential for increasing the efficiency of dragline coal mining operations.

Western Electric Company has ordered one of the new MAVIS™ automated voice information systems developed by MDEC. It will be operated by Southwestern Bell Telephone Company in Kansas City, Kan., and, applying MAVIS's voice response capabilities, will provide automatic reporting of commodity information on a nationwide basis to Commodity News Service subscribers. With its ability to handle up to 256 phone lines simultaneously, MAVIS will provide general market announcements, selected stock information and commodity information in response to telephone inquiries.

MDEC's solid state voice research has led also to a highly reliable cockpit warning system to be installed in the new DC-9 Super 80 jetliners. It will verbally and automatically call pilots' attention to necessary procedures and warn of malfunctions. Military versions of this system are being developed.

**ACTRON.** One year after introducing the new Actrion III microcomputer numerical control system for automating machine tools, Actron in 1977 developed a modular version which makes it possible for machine tool manufacturers to include Actrion III in their basic machine designs. It is designated Designer Series I

and gives us an important option to offer in marketing Actrion III.

Actron continued in 1977 to work on the development of an advanced stabilization and vibration-elimination system to be used in helicopters to control target acquisition and weapons firing. A developmental model of this system, which has potential applications in advanced scout and attack helicopters, is being produced under a contract from the U.S. Army.

Also continuing is development of a new high-speed data recording system based on an advanced application of light-emitting diodes as optical printers.

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***MDFC*** McDonnell Douglas Finance Corporation earned $10.7 million in 1977, compared with $10.8 million in 1976. The total volume of financing activity was $117 million in 1977, compared with $56 million in 1976.

The ability to lease a number of DC-9s on an operating lease basis contributed substantially to the fact that 1977 aircraft financing, at $78 million, was more than double the 1976 total of $35 million. Leasing of equipment other than aircraft totaled $39 million in 1977, almost double 1976's $21 million.

On 31 December 1977 MDFC's financing portfolio included $84 million from 73 non-airline customers engaged in such varied businesses as manufacturing paper and allied products, mining, transportation services, restaurant operation, surface transportation, communications and banking. This represented 19% of the total financing portfolio, as compared with 14% a year earlier. During 1977 a regional office was opened in San Francisco.

Taking advantage of favorable conditions in the debt market, MDFC placed fixed-rate term debt of $59 million in 1977. This included $34 million in 15-year debt to institutional investors and $25 million in 5-year debt to banks. This was accomplished on the basis of MDFC credit with no support from MDC. Attractive rates in commercial paper caused MDFC to borrow extensively in this market also in 1977.

A separate MDFC annual report has been prepared and is available upon request. A condensed financial report on MDFC is presented in Note D.

***MDC REALTY COMPANY*** In July MDC Realty acquired all general partnership interest in Douglas Plaza, a complex of offices, restaurants and retail outlets being developed in Orange County, Calif. Gross lease revenues produced by the first phase of this project are expected to total $1,873,000 in 1978 and plans are underway for additional office buildings to be constructed.

During the year the Realty Company was active in renovating and leasing out MDC excess facilities in Sacramento and Culver City, Calif. and in Ann Arbor, Mich.

***VITEK*** VITEK Systems, Inc. was created in 1977 as a wholly-owned MDC subsidiary producing automated systems for clinical laboratories. Its first major product is the AutoMicrobic System (AMS™) which analyzes urine samples and identifies appropriate antibodies. The antibiotic test capability of AMS is still awaiting approval by the U.S. Food and Drug Administration and work on a highly automated $16 million facility for production of AMS test kits is near completion.

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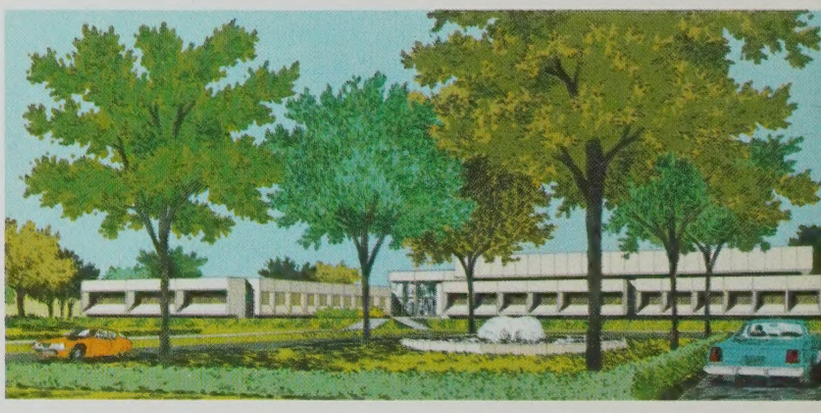
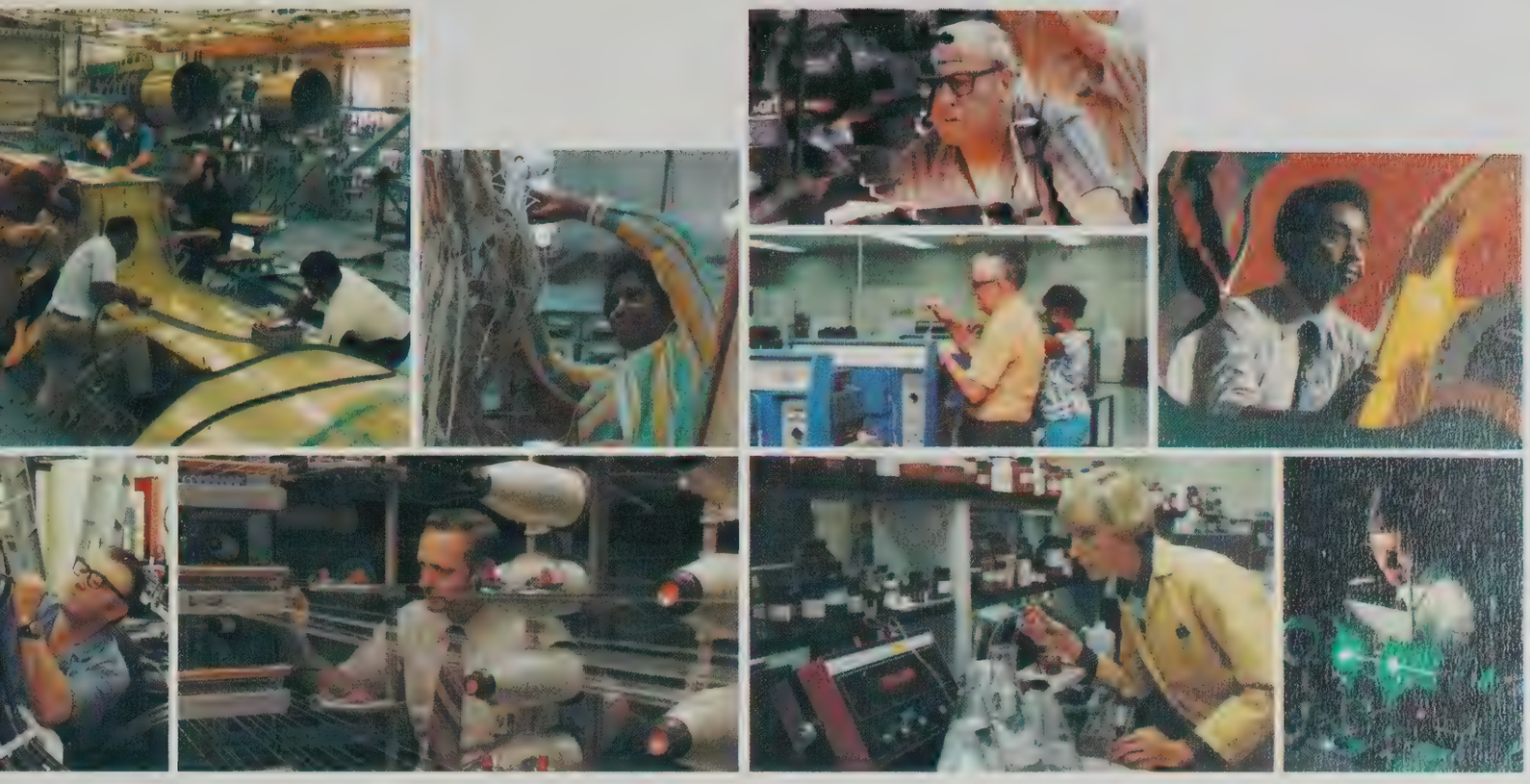
***RESEARCH LABORATORIES***

Shown here is an artist's conception of a new 50,000-square-foot home for McDonnell Douglas Research Laboratories (MDRL) to be built in 1978-79 near our St. Louis headquarters.

The single level building, in which MDRL will perform applied research relevant to the long range needs of the corporation's operating divisions, will be situated on a 14-acre site and when opened will be the base of operations for a staff of 85.

MDRL was established in 1970 through consolidation of the McDonnell Research Laboratories and the Douglas Advanced Research Laboratory. Since then its facilities have been scattered in a number of buildings.





## MDC IS PEOPLE

Two weeks before last Christmas MDC people in the St. Louis area launched Operation Helping Hand, a new program for collecting food for persons in need. At the same time MDC people in California were conducting two similar activities of their own: Project Joy 77, aimed at providing toys and games for needy children, and Project Love, through which gifts were collected for Indian children.

By the time Christmas arrived, thousands of pounds of food and thousands of gifts had been distributed. And three notable additions had been made to the long list of ways in which the men and women of MDC contribute not only to the success of their company but to their communities and the world at large as well.

Throughout 1977 the people of MDC made many contributions in the U.S. and in other countries. They worked in and participated in the activities of 51 communities in 24 states, the District of Columbia, the island of Kwajalein in the Pacific, and 11 nations including Australia, Canada, England, Japan and West Germany.

As of December 1977 MDC employed 61,577 persons, more than 3,500 of them military veterans who were hired or reinstated in 1977. Their $1,079,516,205 in wages and salaries during the year became part of the economic lifeblood of the communities in which they lived.

MDC people contributed substantially to such programs as the Personnel Charity Trust (PCT) in the St. Louis area and Titusville, Florida, the Associated In-Group Donors (AID) program in California, and similar programs at Actron, DACAN, MDEC, and Tulsa. More than $2,300,000 from donations to these programs was given to charitable groups in 1977.

The corporation, too, performed numerous creative services in 1977. By the end of 1977, 655 MDC people and 491 of their spouses had participated in our Pre-Retirement Planning Seminar for St. Louis area workers. A Financial Planning for Retirement program designed to encourage employes between ages 40 and 55 to begin a financial plan for supplementing their retirement income was inaugurated in St. Louis during 1977. The pilot program was presented to 67 employes and 53 spouses.

The Develop Student Engineers (DSE) program, a work-study program to encourage minority group members to become engineers, is now in its fourth year. Six of the 37 students currently enrolled are engineering students in college. This seven-year work-study program provides summertime remedial study and engineering-related employment for high school students who, upon graduation, become eligible to attend college and earn engineering degrees under an MDC-financed college co-op program.

There were 28,714 registrations by MDC employes for company-funded training and education programs in 1977. In our College Study Program, 34 Certificates were awarded along with 60 Bachelor's, 49 Master's, 3 Professional, and 4 Doctor's degrees.

MDC employes whose job performance has suffered as the result of alcoholism or drug abuse continue to receive assistance through an Employe Assistance Program office. To date 2,725 employes and 400 family dependents have received this assistance, with approximately 78% of employes who underwent treatment returning successfully to their work assignments.

Our eighth annual Affirmative Action Program went into effect early in 1977, MDC having exceeded previously established goals for employing and promoting minority and female personnel. We developed Affirmative Action Plans (AAPs) for each of our major facilities to enhance employment and advancement of minorities and females and to establish hiring and promotion goals. We also developed AAPs to enhance employment of the handicapped, disabled veterans, and veterans of the Vietnam era.

Under the College Cluster Program, which is sponsored by the National Alliance of Businessmen to upgrade minority colleges, we donated equipment suitable for laboratory teaching and made special recruiting efforts at minority and women's colleges. Our Youth Motivation Program, designed to encourage young people to achieve their full potential, is active in communities where MDC facilities are located.

We continued to expand the level of our assistance to businesses owned by members of minority races or employing handicapped persons, awarding 1,657 contracts worth $4,825,613 to such companies in 1977. Our Voluntary Assistance Program provided management and technical counseling upon request, and our quarterly MDC Small Business Newsletter published information about small, minority-owned sources of supply as well as information to help them grow and prosper.

We continued to participate in programs of the National Urban League, the United Negro College Fund, SER (Jobs for Progress, Inc.), and the Mexican-American Opportunity Foundation.

MDC again observed United Nations Day with a paid holiday on Monday, 24 October 1977. This holiday, which marked the 32nd anniversary of the founding of the United Nations, was enriched by cultural, educational, recreational, and entertainment activities for our people and their families.

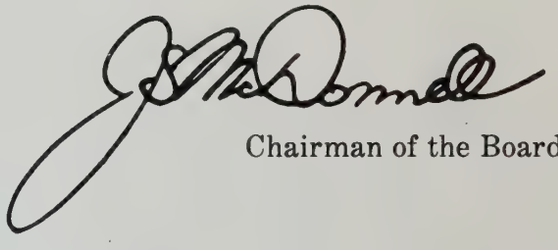
Employe benefit programs paid for by MDC in 1977 totaled $464,109,254. MDC personnel are covered by some of the finest benefit programs in industry today. These include voluntary savings plans; retirement income plans; extensive life, medical, hospital, and surgical insurance coverages; insured dental plans; vision care coverage; layoff benefits; vacation and holiday pay; and sick leave, military reserve duty, bereavement, and jury duty pay.

Under our retirement income plans, 2,828 teammates retired in 1977 and total pension payments for 1977 to all retired personnel totaled almost $51 million. MDC employes, retirees, and eligible dependents or beneficiaries, in payment of more than 539,000 claims, were reimbursed $81,787,210 under the medical, dental, and hospital insurance coverages, and $9,392,455 in death benefits.

In 1977 MDC utilized facilities having a total floor area of 25,205,009 gross square feet on 8,671 acres of land. The Corporation purchased materials, parts, and supplies costing $1,548,920,685, and charged $115,990,027 against 1977 earnings for currently payable and deferred taxes.

To remain a leader in our industry and assure our ability to perform creative services in the future, we continued our practice of retaining the majority of net earnings for financing research and product development, modernizing facilities and taking advantage of opportunities for future growth.

By authority of the Board of Directors,



Chairman of the Board

President and Chief Executive Officer

10 February 1978

## CONSOLIDATED STATEMENT OF EARNINGS

| Years Ended 31 December | 1977 | 1976 |
|---|---|---|
| **Income** | | |
| Sales | $3,544,798,168 | $3,543,713,215 |
| Other income | 60,220,376 | 40,061,955 |
| | 3,605,018,544 | 3,583,775,170 |
| **Costs and Expenses** | | |
| Cost of products and services | 2,914,288,180 | 2,965,305,884 |
| Research and development | 123,880,457 | 105,566,398 |
| Administrative and general | 340,481,409 | 309,322,988 |
| Interest and debt expense | 10,052,432 | 23,933,255 |
| Income taxes, *Note G* | 93,357,938 | 70,791,403 |
| | 3,482,060,416 | 3,474,919,928 |
| **Net Earnings** | $ 122,958,128 | $ 108,855,242 |
| **Earnings Per Share,** *Note Q* | $3.20 | $2.85 |

## CONSOLIDATED STATEMENT OF SHAREHOLDERS' EQUITY

**Years Ended 31 December 1977 and 1976**

| | Common Stock | Capital In Excess Of Par Value | Earnings Retained For Growth | Treasury Shares |
|---|---|---|---|---|
| **Shareholders' Equity at 1 January 1976** | $38,215,178 | $308,201,928 | $523,775,411 | ($23,210,150) |
| Cash dividends declared—$.44 a share | | | (16,062,644) | |
| Treasury shares (212,928) issued under the Incentive Compensation Plan | | 1,821,935 | | 2,818,466 |
| Stock options exercised | 70,877 | 863,351 | | |
| Net earnings | | | 108,855,242 | |
| **Shareholders' Equity at 31 December 1976** | 38,286,055 | 310,887,214 | 616,568,009 | (20,391,684) |
| Cash dividends declared—$.50 a share | | | (18,403,209) | |
| Treasury shares (194,506) issued under the Incentive Compensation Plan | | 2,072,175 | | 2,574,620 |
| Stock options exercised | 71,075 | 1,158,218 | | |
| Net earnings | | | 122,958,128 | |
| **Shareholders' Equity at 31 December 1977** | $38,357,130 | $314,117,607 | $721,122,928 | ($17,817,064) |

See note A, summary of accounting policies, and other notes to consolidated financial statements.

# CONSOLIDATED BALANCE SHEET

| ASSETS | 1977 | 1976 |
|---|---|---|
| **Current Assets** | | |
| Cash including time deposits | $ 161,424,208 | $ 8,022,433 |
| Short-term investments | 238,413,136 | 50,986,910 |
| Receivables: | | |
| Accounts receivable - U.S. Government | 113,661,224 | 88,024,299 |
| Accounts and notes receivable - commercial | 78,838,264 | 65,905,704 |
| | 192,499,488 | 153,930,003 |
| Contracts in process and inventories, *Note C:* | | |
| Commercial products in process | 1,200,708,836 | 1,052,105,630 |
| Government contracts in process | 837,416,243 | 992,160,570 |
| Materials and spare parts | 346,933,715 | 353,480,025 |
| Progress payments to subcontractors | 250,465,590 | 231,195,245 |
| | 2,635,524,384 | 2,628,941,470 |
| Less applicable progress payments | 1,223,576,912 | 1,134,844,075 |
| | 1,411,947,472 | 1,494,097,395 |
| Prepaid expenses | 14,061,685 | 14,746,411 |
| **Total Current Assets** | 2,018,345,989 | 1,721,783,152 |
| **Other Assets** | | |
| Investment in MDFC, *Note D* | 105,951,962 | 103,260,548 |
| Accounts and notes receivable - commercial | 5,359,105 | 12,778,057 |
| Equipment leased to customers | 73,687,688 | 38,664,560 |
| Other | 11,736,703 | 10,400,125 |
| | 196,735,458 | 165,103,290 |
| **Facilities (at cost),** *Notes E and H* | | |
| Land | 25,334,975 | 23,102,889 |
| Buildings and fixtures | 283,361,722 | 273,903,379 |
| Machinery and equipment | 417,103,099 | 386,598,755 |
| | 725,799,796 | 683,605,023 |
| Less accumulated depreciation | 476,245,547 | 445,831,798 |
| | 249,554,249 | 237,773,225 |
| **Deferred Charges** | 2,890,649 | 4,997,089 |
| | $2,467,526,345 | $2,129,656,756 |

See note A, summary of accounting policies, and other notes to consolidated financial statements.

## 31 December 1977 and 1976

| LIABILITIES AND SHAREHOLDERS' EQUITY | 1977 | 1976 |
|---|---|---|
| **Current Liabilities** | | |
| Accounts and drafts payable | $ 285,803,100 | $ 234,269,395 |
| Accrued expenses | 76,914,276 | 68,026,387 |
| Employe compensation | 111,629,717 | 95,770,597 |
| Income taxes, principally deferred, *Note G* | 409,837,488 | 387,795,647 |
| Progress payments received | 174,034,771 | 56,324,243 |
| Estimated modification, completion, and other contract adjustments | 266,329,785 | 198,293,499 |
| Current maturities of long-term debt | 7,678,988 | 5,811,871 |
| **Total Current Liabilities** | 1,332,228,125 | 1,046,291,639 |
| **Long-Term Debt,** *Note H* | 79,517,619 | 138,015,523 |
| **Shareholders' Equity,** *Notes H, I and J* | | |
| Common Stock, $1.00 par value: | | |
| Shares authorized: 60,000,000 | | |
| Shares issued | 38,357,130 | 38,286,055 |
| Capital in excess of par value | 314,117,607 | 310,887,214 |
| Earnings retained for growth | 721,122,928 | 616,568,009 |
| | 1,073,597,665 | 965,741,278 |
| Less cost of treasury shares: | | |
| 1977 - 1,346,034; 1976 - 1,540,540 | 17,817,064 | 20,391,684 |
| **Total Shareholders' Equity** | 1,055,780,601 | 945,349,594 |
| **Commitments and Contingencies,** *Notes L, M, N and P* | | |
| | $2,467,526,345 | $2,129,656,756 |

# CONSOLIDATED STATEMENT OF CHANGES IN FINANCIAL POSITION

| Years Ended 31 December | 1977 | 1976 |
|---|---|---|
| **Source of Funds** | | |
| From operations: | | |
| Net earnings | $122,958,128 | $108,855,242 |
| Earnings retained by MDFC | (2,691,414) | (2,807,162) |
| Gain on retirement of long-term debt | (824) | (64,561) |
| Depreciation of facilities and leased equipment | 58,228,628 | 47,924,382 |
| Amortization of deferred charges | 2,356,856 | 2,432,517 |
| Stock issued to employes | 4,646,795 | 4,640,401 |
| | 185,498,169 | 160,980,819 |
| Proceeds of stock options exercised | 1,229,293 | 934,228 |
| Facilities sold or retired | 2,262,414 | 557,809 |
| Decrease in non-current receivables | 7,418,952 | 367,113 |
| Long-term notes payable | | 884,641 |
| | 196,408,828 | 163,724,610 |
| **Use of Funds** | | |
| Cash dividends declared | 18,403,209 | 16,062,644 |
| Facilities acquired | 57,085,039 | 41,457,939 |
| Long-term borrowings paid or retired | 58,497,080 | 108,463,706 |
| Equipment leased to customers | 50,210,154 | 19,817,848 |
| Miscellaneous | 1,586,995 | 883,636 |
| | 185,782,477 | 186,685,773 |
| **Increase (Decrease) In Working Capital** | $ 10,626,351 | ($ 22,961,163) |
| **Analysis of Changes in Working Capital** | | |
| Cash including time deposits | $153,401,775 | ($ 23,435,914) |
| Short-term investments | 187,426,226 | 50,986,910 |
| Current receivables | 38,569,485 | 24,018,755 |
| Contracts in process and inventories, net of progress payments | (199,860,451) | (158,981,453) |
| Prepaid expenses | (684,726) | 534,709 |
| Short-term borrowings | (1,867,117) | 139,672,598 |
| Other current liabilities | (166,358,841) | (55,756,768) |
| **Increase (Decrease) In Working Capital** | $ 10,626,351 | ($ 22,961,163) |

See note A, summary of accounting policies, and other notes to consolidated financial statements.

## A. Summary of Accounting Policies

**Principles of Consolidation.** The consolidated financial statements include the accounts of McDonnell Douglas Corporation (MDC) and all of its significant subsidiaries except McDonnell Douglas Finance Corporation (MDFC), which is accounted for on the equity basis. In consolidation significant intercompany items and transactions are eliminated.

**Long-Term Notes Receivable.** Long-term notes receivable, acquired by MDC primarily from sales of commercial aircraft, are recorded at their fair market value. Most notes are transferred to MDFC or its export finance subsidiary at that value.

**Long-Term Contracts.** In accordance with industry practice, substantial amounts applicable to long-term Government contracts and commercial aircraft programs are classified as current assets or liabilities in the balance sheet, even though some portion is not expected to be realized within one year.

Adjustments of costs and earnings may be made during and after completion of such long-term contracts; therefore, earnings recorded in the current year may include adjustments applicable to sales recorded in prior years.

**Government Contracts.** Government contracts are primarily accounted for on a percentage-of-completion method wherein sales are recorded at their estimated contract price as the work is performed. Under this method, all costs (including general and administrative expenses) are charged to Costs and Expenses as incurred, and the recorded sales values (equal to incurred costs plus estimated earnings) are carried in the account, Government contracts in process. At the time the item is completed and accepted by the customer, the sales value of the item is transferred to Accounts receivable - U.S. Government.

Certain contracts contain incentive provisions which provide increased or decreased earnings based upon performance in relation to established targets. Incentives based upon cost performance are recorded currently and other incentives are recorded when the amounts can reasonably be determined.

Title to certain items, included in the captions of materials and progress payments to subcontractors, is vested in the U.S. Government by reason of progress payment provisions of related contracts.

**Commercial Programs.** Commercial products in process (including military versions of commercial aircraft) are stated on the basis of production and tooling costs incurred less cost allocated to delivered items, reduced (where applicable) to realizable market after giving effect to the estimated costs of completion.

Cost of sales for the DC-9 commercial aircraft program is determined on a specific-unit cost method, while the cost of sales of the DC-10 commercial aircraft program is determined on a program-average cost method. Inasmuch as the DC-10 program involves several models with differing sales prices and costs and the contracts contain escalation clauses based upon the future cost of materials and labor, the cost of sales for a particular DC-10 aircraft is computed at the percentage of the sales price that the total of the estimated tooling and production costs for the entire program bears to the total estimated sales price for all aircraft in the program.

Materials and spare parts are stated at the lower of cost (priced generally on a moving average method) or market.

**Income Taxes.** United States and foreign income taxes are computed at current tax rates on reported earnings, less investment tax credits. Adjustments to such tax computations are made currently for all items whose income tax treatment creates a permanent difference between taxable income and reported income, but are not made for items that create only timing differences between fiscal periods.

The investment tax credits arising from commercial aircraft tooling are recorded as reductions of income tax provisions as the tooling is amortized; credits from leased aircraft are recorded over the related lease periods; and all other credits are recorded in the current period.

The undistributed earnings of Douglas Aircraft Company of Canada Ltd. (DACAN) are considered to be permanently invested in DACAN; accordingly, no provisions are made for taxes which would become payable upon the distribution of DACAN's earnings as a dividend to MDC. To the extent that DISC (Domestic International Sales Corporation, as defined in Section 992 of the Internal Revenue Code) income is expected to be reinvested and remain tax exempt, no provisions for income taxes thereon are made. All domestic subsidiaries other than MDC's and MDFC's DISCs are included in a consolidated federal income tax return, and dividends from these subsidiaries are not subject to income tax.

**Facilities.** Facilities are depreciated over the useful lives of the various classes of properties, using primarily accelerated methods.

**Incentive Compensation Plan.** Cash, stock and contingent stock awards under the Incentive Compensation Plan are charged to expense when paid. At the time options are exercised, the par value of the shares issued is credited to Common Stock and the excess of the proceeds over the par value is credited to Capital in excess of par value. There are no charges or credits to earnings from the exercise of options.

## B. Segment Financial Data

Financial data related to aircraft, space systems and

missiles, and other industry segments are shown below. These data were developed by classifying each division and subsidiary according to its principal products and combining related operations into industry segments, and so the segment data include immaterial amounts related to other products and services. Intersegment transfers were immaterial and were made at cost. Sales and other income, earnings and assets of these segments are reconciled to the consolidated financial statements amounts in the tables presented below.

The aircraft segment's products include the design, development and production of transport, attack and fighter aircraft. The DC-series transport aircraft are produced for airlines worldwide and for the United States military forces (including a tanker-cargo version of the DC-10 under development). The YC-15 transport (jointly funded by the United States Government and MDC) was developed to evaluate short-take-off-and-landing concepts. Tactical attack and fighter aircraft are produced for the United States and foreign military forces, covering a full spectrum of missions (air superiority, close-support, reconnaissance, electronic counter-measures, etc.) and include land and aircraft-carrier-based versions and the latest in vertical-take-off-and-landing technology. The space systems and missiles segment's products include advanced studies and development and production of satellite launching vehicles, planetary probes and missions, space shuttle components and payloads, space manufacturing processes, ballistic missile defense systems and tactical and strategic missiles. The caption, Other, presents non-reportable segments which are engaged in the computer services, electronics, and other industries.

| YEARS ENDED 31 DECEMBER | 1977 | 1976 |
|---|---|---|
| Sales and other income | | |
| Aircraft | $2,840,525,921 | $2,971,502,872 |
| Space systems and missiles | 601,313,411 | 486,939,981 |
| Other | 140,666,209 | 112,132,832 |
| Operating income | 3,582,505,541 | 3,570,575,685 |
| Net earnings of MDFC | 10,691,414 | 10,807,162 |
| Non-operating income | 11,821,589 | 2,392,323 |
| | $3,605,018,544 | $3,583,775,170 |
| Earnings | | |
| Aircraft | $ 162,154,788 | $ 164,139,790 |
| Space systems and missiles | 46,609,400 | 33,241,550 |
| Other | 5,620,111 | 1,142,886 |
| Earnings from operations | 214,384,299 | 198,524,226 |
| Net earnings of MDFC | 10,691,414 | 10,807,162 |
| Non-operating income and expense | 4,171,870 | (3,196,623) |
| General corporate expenses | (2,879,085) | (2,554,865) |
| Interest expense | (10,052,432) | (23,933,255) |
| Income taxes | (93,357,938) | (70,791,403) |
| | $ 122,958,128 | $ 108,855,242 |

| YEARS ENDED 31 DECEMBER | 1977 | 1976 |
|---|---|---|
| Assets | | |
| Aircraft | $2,726,573,563 | $2,659,347,476 |
| Space systems and missiles | 343,449,094 | 347,215,251 |
| Other | 92,026,741 | 73,487,274 |
| Assets used in operations | 3,162,049,398 | 3,080,050,001 |
| Less applicable progress payments | (1,223,576,912) | (1,134,844,075) |
| Investment in MDFC | 105,951,962 | 103,260,548 |
| Corporate assets, principally cash and short-term investments | 423,101,897 | 81,190,282 |
| | $2,467,526,345 | $2,129,656,756 |
| Depreciation and amortization | | |
| Aircraft | $ 42,967,252 | $ 35,187,563 |
| Space systems and missiles | 6,263,575 | 5,907,848 |
| Other | 8,613,689 | 6,021,196 |
| Facilities acquired | | |
| Aircraft | $ 21,364,167 | $ 19,260,503 |
| Space systems and missiles | 15,755,992 | 11,366,586 |
| Other | 16,953,276 | 8,593,341 |

Operating income includes sales of $70,947,000 in 1977 and $44,727,000 in 1976 of commercial transport aircraft sold to affiliates for lease to unaffiliated customers. The 1976 sales were made at regular selling prices, as the aircraft were delivered under direct-financing leases; and the 1977 sales were recorded at production costs, as the aircraft were delivered under two-year leases, renewable for up to an additional twelve years. The aircraft segment will share in the earnings from these operating leases in an amount equal to the normal manufacturing profit plus interest, which will be recognized in the aircraft segment's earnings over the life of the related leases.

All segments made sales to U.S. Government agencies (including sales to foreign governments through foreign military sales contracts with U.S. Government agencies), amounting to approximately $2,659,000,000 in 1977 and $2,376,000,000 for 1976. No other single customer accounted for 10% or more of consolidated revenues in 1977 or 1976.

### C. Commercial Products in Process

A summary of commercial products in process at the end of 1977 is presented below, with comparable amounts at the end of 1976.

| 31 DECEMBER | 1977 | 1976 |
|---|---|---|
| Commercial aircraft programs: | | |
| Aircraft in process | $ 498,140,996 | $ 343,326,903 |
| Deferred production costs applicable to delivered DC-10 aircraft | 458,908,000 | 474,985,000 |
| Unamortized tooling, principally DC-10 | 169,983,112 | 176,879,729 |
| | 1,127,032,108 | 995,191,632 |
| Other commercial programs | 73,676,728 | 56,913,998 |
| | $1,200,708,836 | $1,052,105,630 |

DC-10 tooling and production costs were charged to cost of sales based upon the estimated average unit cost for the program. The costs incurred to produce DC-10 aircraft delivered prior to the end of 1973 were higher than average, which is normal in a new aircraft program. The costs incurred in excess of the estimated average unit cost were deferred, to be recovered by production and sale of lower-than-average cost units. DC-10 aircraft delivered from 1 January 1974 through 30 June 1976 were produced at less than program-average in the aggregate and, consequently, absorbed a portion of the deferred costs of the program.

From 30 June 1976 through the end of 1977, the DC-10 aircraft delivered were produced at such a low production rate that production costs exceeded program-average on most of the aircraft. The costs of $21,295,000 in excess of program-average in 1977 and the $16,100,000 in 1976 were charged direct to cost of sales upon delivery of these aircraft in order to prevent deferred production costs from increasing during this 18 month period. The thirty DC-10 aircraft under firm order at 31 December 1977, in the aggregate, are expected to be produced at less than program-average and to absorb approximately $120,400,000 of the $629,000,000 deferred tooling and production costs; however, additional deferred costs may be incurred for sustaining tooling and early production units of new models.

The 400 aircraft accounting pool is in excess of the 275 DC-10 aircraft ordered (of which 245 had been delivered) plus the 31 DC-10 conditional orders and options at 31 December 1977. Comparable quantities at 31 December 1976 were 246 orders (of which 231 had been delivered) plus 12 conditional orders and options.

Estimated sales proceeds from undelivered aircraft of a 400 aircraft program exceed the production and tooling costs in inventory at 31 December 1977 plus the estimated additional production and tooling costs to be incurred. However, if less than 400 DC-10 aircraft are sold, or if the sales proceeds are over-estimated, or if the costs to complete the program are underestimated, substantial amounts of unrecoverable costs may be charged to expense in subsequent fiscal periods. MDC continues to believe that the sale of 400 DC-10 aircraft is realistic and achievable in the early 1980s.

**D. Investment in Finance Subsidiary**

The investment in MDFC was represented by a capital investment of $80,000,000 and earnings retained for growth of $25,951,962 at 31 December 1977 and $23,260,548 at 31 December 1976. The condensed financial data presented below have been summarized from the audited consolidated financial statements of MDFC:

| 31 DECEMBER | 1977 | 1976 |
|---|---|---|
| ASSETS | | |
| Cash | $ 5,948,300 | $ 12,700,971 |
| Notes and leases receivable - net | 375,985,244 | 379,100,692 |
| Accounts with MDC | 202,387 | |
| Investment in operating leases | 61,420,494 | |
| Other assets | 11,930,086 | 8,460,650 |
| Total | $455,486,511 | $400,262,313 |
| LIABILITIES AND EQUITY | | |
| Short-term notes payable | $ 69,000,000 | $ 69,150,000 |
| Accounts payable and accrued expenses | 7,299,885 | 3,399,453 |
| Accounts with MDC | | 1,995,171 |
| Deferred income tax items | 87,261,280 | 75,294,887 |
| Senior long-term debt | 181,106,520 | 140,917,700 |
| Subordinated notes payable | 4,866,864 | 6,244,554 |
| Shareholder's equity | 105,951,962 | 103,260,548 |
| Total | $455,486,511 | $400,262,313 |

| YEARS ENDED 31 DECEMBER | 1977 | 1976 |
|---|---|---|
| Operating income | $ 38,345,474 | $ 37,912,302 |
| Costs and expenses | 21,057,066 | 20,789,600 |
| Net earnings | 10,691,414 | 10,807,162 |

An Income Maintenance Agreement was executed in 1975, in which MDC agreed to pay MDFC such amounts as may be required to cause MDFC's net earnings available for fixed charges to be 1½ times its fixed charges for each year. No payments have been required under this Agreement.

**E. Current Replacement Cost (Unaudited)**

The Securities and Exchange Commission requires supplementary data with respect to the current replacement cost of inventories and plant and equipment, and the effects thereof on cost of sales and depreciation.

Pricing of long-term contracts for products to be built to customer specifications must consider estimated costs of performance, as contract prices are established before the actual costs are known. The estimated costs from which the price for most government contracts is negotiated provide for assumed inflation. While competitive market conditions may materially affect the prices negotiated with airline customers, the base prices for commercial aircraft are established after consideration of the estimated costs of the entire program; consequently, long-term trends in inflation are of more significance in commercial program pricing than short-term fluctuations.

Current replacement cost methodology is therefore inappropriate for restating inventories and cost of sales in MDC's long-term contracting environment, as inventory profits do not occur in its long-term contracts. Reference is made to the Annual Report on Form 10-K (available upon request) for quantitative information with respect to the estimated replacement cost of plant and equipment on 31 December 1977 and

1976, as compared with historical cost, and the related depreciation expense for the years then ended.

### F. Credit Arrangements

MDC has open lines of credit of $50,000,000 with sixteen U.S. banks. Under these lines of credit, borrowings are made on notes maturing in 90 days or less, with interest at 1.09 times the individual bank's prime rate on the borrowing date. No notes were outstanding under these lines of credit at 31 December 1977.

DACAN has a similar arrangement at the same interest rate for an open line of credit of $15,000,000 with a Canadian bank, with borrowings guaranteed by MDC. No borrowings were outstanding at 31 December 1977.

### G. Income Taxes

Provisions for income taxes were at an effective tax rate of approximately 43% (39% in 1976), which is less than the United States corporate rate of 48%, and the underlying causes of this difference and their effect on the income tax provision are shown below:

| YEARS ENDED 31 DECEMBER | 1977 | 1976 |
|---|---|---|
| Pro forma income tax computed at 48% of pre-tax earnings | $103,831,712 | $86,230,390 |
| State income taxes net of federal tax benefit | 4,291,675 | 3,223,989 |
| | 108,123,387 | 89,454,379 |
| Less: | | |
| Tax effect of permanent differences: | | |
| Net earnings of MDFC | 5,131,879 | 5,187,438 |
| DISC tax-exempt income | 3,844,575 | 8,731,330 |
| Other - net | 1,436,653 | 390,917 |
| Tax rate differential on timing differences and foreign income | 807,349 | 41,785 |
| Investment tax credits | 3,544,993 | 4,311,506 |
| | 14,765,449 | 18,662,976 |
| Income tax provision | $ 93,357,938 | $70,791,403 |

At 31 December 1977, the undistributed earnings of subsidiaries which would be taxable under the Internal Revenue Code if distributed, but for which no provisions for income taxes have been provided (see Note A, subcaption Income Taxes), amounted to $127,152,223 for DISCs and $21,272,549 for DACAN. Dividends from DACAN would not significantly increase taxes payable because of applicable foreign tax credits.

The income taxes payable for a year may be materially different from the provision for that year. Tax reporting of the cost of sales for the DC-10 program on the specific unit cost method, rather than the program-average method used in the financial statements, has been the major cause of timing differences. The tabulation below presents a summary of the factors (estimated for 1977 using current accounting methods and with the 1976 estimates restated to the amounts shown on the tax returns filed) that contributed to the differences between the income taxes payable for the year and the provision for such taxes.

| YEARS ENDED 31 DECEMBER | 1977 | 1976 |
|---|---|---|
| United States corporation income tax: | | |
| Current taxes: | | |
| Tax for consolidated group | $116,079,405 | $30,471,867 |
| Net credit (charge) to unconsolidated subsidiaries for effect of including their operations in consolidated return | 9,137,202 | (796,393) |
| | 125,216,607 | 29,675,474 |
| Deferred taxes: | | |
| Net effect of timing differences | (40,030,014) | 34,491,749 |
| Investment tax credits deferred, less amortization | (504,000) | (503,855) |
| | 84,682,593 | 63,663,368 |
| Foreign income taxes: | | |
| Current | 537,201 | 2,469,390 |
| Deferred | (115,077) | (1,541,333) |
| | 422,124 | 928,057 |
| State income taxes: | | |
| Current | 9,774,238 | 7,748,798 |
| Deferred | (1,521,017) | (1,548,820) |
| | 8,253,221 | 6,199,978 |
| Income tax provision | $ 93,357,938 | $70,791,403 |

On 28 June 1977, MDC filed a request with the Internal Revenue Service to change its tax reporting method for all long-term contracts to the completed contract method, effective 1 January 1977; however, this request had not yet been approved or disapproved. Approval of this request as filed would result in no United States corporation income taxes being payable for 1977, and the approximately $38,000,000 of estimated tax payments made for 1977 would become refundable.

### H. Long-Term Debt

The long-term debt outstanding is detailed below:

| 31 DECEMBER | 1977 | 1976 |
|---|---|---|
| Unsecured notes | $ | $ 50,000,000 |
| 4¾% Convertible Subordinated Debentures, due 1991 | 61,894,000 | 61,894,000 |
| 5¼% Space Center Secured Notes, due 1986 | 5,794,226 | 6,362,914 |
| 5½% Space Center Secured Notes, due 1984 | 9,539,747 | 10,847,319 |
| Other | 9,968,634 | 14,723,161 |
| | 87,196,607 | 143,827,394 |
| Less current maturities | 7,678,988 | 5,811,871 |
| | $79,517,619 | $138,015,523 |

The Indenture for the 4¾% Convertible Subordinated Debentures provides for retirement of a minimum (on a cumulative basis) of $4,285,000 of these Debentures annually through conversion, purchase and cancella-

tion, or operation of a sinking fund. At 31 December 1977 sinking fund requirements through 1979 and $251,000 of the 1980 requirement had been fulfilled, principally through purchase of Debentures in the open market. The Debentures are callable at any time (but at a premium to 30 June 1985) and are convertible at $30.61 per share into MDC Common Stock. The conversion price and shares reserved for conversion are subject to adjustment in accordance with antidilution provisions of the indenture. At 31 December 1977, 2,022,020 shares of unissued Common Stock were reserved for conversion of Debentures.

The Space Center Secured Notes are payable in annual amounts of $891,667 for the 5¼% Notes and $1,877,513 for the 5½% Notes, including interest, and are secured by indentures of mortgage and deeds of trust of MDC's interest in certain land and buildings at Huntington Beach, California, having a carrying value of approximately $25,400,000.

Other long-term debt consisted of various notes and debentures with interest rates from a minimum of 5% to a maximum of 9% at 31 December 1977. Facilities having a carrying value of $9,600,000 were mortgaged and assigned as collateral for certain of these agreements.

### I. Incentive Compensation and Stock Options

An Incentive Compensation Plan in effect since 1959 provides for granting awards in cash, stock and stock options to officers and key employes of MDC and subsidiaries. The Compensation Committee, composed of three directors who do not participate in the Plan, annually selects the beneficiaries and determines the awards. Option and stock awards are granted at the market price of MDC stock on the date of award. Stock options are currently granted for a five-year period, and become exercisable 18 months after award. Contingent stock awards are granted concurrently with options, but are paid only if options are not exercised. The Plan provides that a maximum credit of 12% of net earnings after deducting 6% on shareholders' equity, as defined, is to be made available for granting of awards, and this credit amounted to $7,940,290 for 1977. The Compensation Committee limited the credit for 1976 to $6,500,000 which is less than the maximum credit as defined by the Plan. The unearned awards outstanding and amounts available for future awards were as follows:

| 31 DECEMBER | 1977 | 1976 |
|---|---|---|
| Unpaid awards: | | |
| Cash | $ 3,176,398 | $ 2,909,303 |
| Stock: 1977 - 250,474 shares | 5,470,536 | |
| 1976 - 326,903 shares | | 6,610,155 |
| Contingent stock: 1977 - 208,294 shares | 3,910,503 | |
| 1976 - 230,530 shares | | 4,727,973 |
| Available for future awards | 14,571,518 | 12,410,761 |
| | $27,128,955 | $26,658,192 |

Incentive compensation awards paid and charged to expense, aggregated $7,571,519 in 1977 and $7,512,888 in 1976.

Besides the stock options under the Incentive Compensation Plan, a supplemental plan providing for non-qualified options was approved by shareholders in 1971; however, all options issued under this plan had expired by 31 December 1977. Changes in the number of shares issuable under options under both plans were as follows:

| | Available For Awards Of Options | Options Outstanding | Total Shares Reserved |
|---|---|---|---|
| Balances, 1 January 1976 | 1,942,499 | 1,043,393 | 2,985,892 |
| Granted | (146,548) | 146,548 | |
| Exercised | | (70,877) | (70,877) |
| Expired | 1,030 | (179,253) | (178,223) |
| Canceled | 861 | (5,092) | (4,231) |
| Balances, 31 December 1976 | 1,797,842 | 934,719 | 2,732,561 |
| Granted | (145,336) | 145,336 | |
| Exercised | | (71,075) | (71,075) |
| Expired | 14,946 | (172,438) | (157,492) |
| Canceled | | (3,611) | (3,611) |
| Balances, 31 December 1977 | 1,667,452 | 832,931 | 2,500,383 |
| Options exercisable, 31 December 1977 | | 687,595 | |

Options outstanding at 31 December 1977 were all non-qualified, and the option prices ranged from $11.75 to $28.80 a share, with an aggregate option price of $15,637,234. Comparable amounts at 31 December 1976 were $11.75 to $34.30 a share, and $19,290,709.

### J. Savings Plans

Participation in a MDC savings plan is available to substantially all MDC employes. The salaried savings plan provides for fixed amounts to be contributed by MDC based upon employe contributions, while the two hourly savings plans provide for fixed benefits which are based upon employe contributions and are funded by MDC on an actuarial basis. The vested benefits under one of the hourly plans at 30 November 1977 exceeded the market value of the MDC funded assets by approximately $3,500,000.

MDC contributions may be made in cash or, in the case of the salaried savings plan, contributions may be made in shares of MDC Common Stock. Cash contributions to the savings plans aggregated $24,618,087 for 1977 and $22,761,369 for 1976. No contributions in stock were made in 1977 or 1976 and at 31 December 1977 there were 757,070 shares of authorized and unissued Common Stock reserved for issuance under the plan.

### K. Retirement Plans

MDC and its subsidiaries have pension plans covering substantially all of their employes. The market values of pension fund assets of all significant plans as of 30 November 1977 exceeded the actuarially estimated values of vested benefits for each plan, except for one plan which had vested benefits of approximately $115,000,000 in excess of pension fund assets. The total pension expense was $124,463,524 for 1977 and $115,644,634 for 1976.

### L. Customer Financing Commitments

The marketing of commercial aircraft at times will result in agreements to provide or guarantee long-term financing of some portion of the delivery price of aircraft or to guarantee lease payments. At 31 December 1977, $99,000,000 of such guarantees were outstanding. Commitments of $111,000,000 were also outstanding to accept notes in payment for aircraft or to guarantee financing for customers, related to ordered but undelivered aircraft.

### M. Litigation

MDC is a defendant in a number of lawsuits, including seven cases remaining from the crash of a DC-10 aircraft operated by Turkish Airlines on 3 March 1974. MDC is of the opinion that it has valid defenses in all of the actions in which it is a defendant. It is not expected that any damages which might ultimately be paid by MDC would have a material, adverse effect on the financial condition of the company, although the aggregate amount of damages sought is substantial.

### N. Renegotiation

The Renegotiation Act of 1951, as amended, makes almost all earnings on Government contracts of MDC and its subsidiaries subject to renegotiation by the Government.

Substantial portions of the business performed in 1970 and through 30 September 1976 remain subject to renegotiation proceedings. The Act expired on 30 September 1976 but legislation to amend and extend the Act has been proposed.

If the Act is not reinstated, earnings before income taxes on Department of Defense aircraft contracts entered into after 30 September 1976 will be limited to 12% of the sales price under the Vinson-Trammell Act of 1934. MDC is of the opinion that any final determinations under these Acts will have no significant effect on the financial statements and therefore has made no provision for refund.

### O. Foreign Operations and Export Sales

The only material foreign operation of MDC is a Canadian subsidiary almost exclusively engaged in producing commercial aircraft components for shipment to the United States for assembly into complete aircraft.

All business segments made sales to foreign customers, although a significant portion of the export sales were through foreign military sales contracts with the U.S. Government. Foreign sales for 1977 and 1976, by geographical area, are shown in the table below.

| YEARS ENDED 31 DECEMBER | 1977 | 1976 |
|---|---|---|
| North America | $ 12,192,347 | $ 36,733,799 |
| South America | 22,905,499 | 55,161,129 |
| Europe | 421,527,281 | 412,250,728 |
| Asia/Pacific | 275,828,903 | 419,590,809 |
| Mideast/Africa | 396,125,252 | 597,468,217 |
| | $1,128,579,282 | $1,521,204,682 |

### P. Leased Properties

The aggregate rental expense for leased properties was as follows:

| YEARS ENDED 31 DECEMBER | 1977 | 1976 |
|---|---|---|
| Minimum rentals | $67,340,021 | $53,755,723 |
| Contingent rentals | 670,209 | 736,910 |
| Sublease rental income | (10,306,833) | (10,085,068) |
| | $57,703,397 | $44,407,565 |

Minimum rentals include periodic rentals and, in the case of computers and office equipment, usage charges. Contingent rentals represent payments to the United States Government under a lease, and under facilities contracts where payments are made only for usage on non-government work.

Minimum rental payments under leases with initial or remaining terms of one year or more at 31 December 1977 were as follows:

| Year | Total | Real Property | Computer And Other Equipment |
|---|---|---|---|
| 1978 | $18,805,148 | $ 3,693,346 | $15,111,802 |
| 1979 | 13,820,654 | 2,828,521 | 10,992,133 |
| 1980 | 9,584,011 | 2,165,764 | 7,418,247 |
| 1981 | 5,866,205 | 1,541,934 | 4,324,271 |
| 1982 | 3,286,285 | 837,731 | 2,448,554 |
| Thereafter | 3,243,866 | 939,973 | 2,303,893 |
| | $54,606,169 | $12,007,269 | $42,598,900 |

Total minimum rentals to be received under non-cancelable subleases were $3,844,500 at 31 December 1977.

MDC has no material amount of capitalizable leases, as defined by Statement of Financial Accounting Standards No. 13.

### Q. Earnings Per Share

Primary earnings per common and common equivalent share were computed by adjusting net earnings for the after-tax interest and debt expense applicable

to the 4¾% Convertible Subordinated Debentures and dividing that amount by the weighted average number of common and common equivalent shares outstanding during the year as shown below:

| YEARS ENDED 31 DECEMBER | 1977 | 1976 |
|---|---|---|
| PRO FORMA EARNINGS | | |
| Net earnings | $122,958,128 | $108,855,242 |
| Adjustment for interest and debt expense, less applicable income taxes | 1,554,754 | 1,554,754 |
| | $124,512,882 | $110,409,996 |
| PRO FORMA SHARES | | |
| Outstanding | 36,807,181 | 36,510,762 |
| Issuable upon conversion of the 4¾% debentures | 2,022,020 | 2,022,020 |
| Net increase upon exercise of stock options | 99,214 | 182,776 |
| | 38,928,415 | 38,715,558 |
| PRIMARY EARNINGS PER SHARE | $3.20 | $2.85 |

The fully-diluted earnings per share computation differs only in using the year-end market price of a share of stock instead of the average market price in determining the dilutive effect of options, and results in the same earnings per share.

**R. Quarterly Results of Operations (Unaudited)**

The table below presents unaudited quarterly financial information for the years ended 31 December 1976 and 1977.

| Quarter | Sales | Gross Margin | Net Earnings | Earnings Per Share |
|---|---|---|---|---|
| YEAR ENDED 31 DECEMBER 1976: | | | | |
| 1st | $ 811,282,559 | $145,877,808 | $25,310,951 | $.67 |
| 2nd | 958,304,066 | 146,420,632 | 31,048,280 | .81 |
| 3rd | 785,515,432 | 137,674,384 | 24,129,596 | .63 |
| 4th | 988,611,158 | 148,434,507 | 28,366,415 | .74 |
| YEAR ENDED 31 DECEMBER 1977: | | | | |
| 1st | $ 759,314,140 | $145,049,760 | $28,013,736 | $.73 |
| 2nd | 891,107,846 | 161,788,126 | 31,378,219 | .82 |
| 3rd | 799,260,076 | 152,882,220 | 29,305,946 | .76 |
| 4th | 1,095,116,106 | 170,789,882 | 34,260,227 | .89 |

**S. Quarterly Common Stock Prices and Dividends**

The range of market prices for a share of MDC Common Stock is shown below, by quarters for 1977 and 1976. Prices are as reported traded on the New York Stock Exchange.

| | 1977 | | 1976 | |
|---|---|---|---|---|
| Quarter | High | Low | High | Low |
| 1st | $24¼ | $19⅜ | $18⅞ | $14¾ |
| 2nd | 25⅜ | 19⅜ | 24⅞ | 17½ |
| 3rd | 27¼ | 20⅞ | 25 | 20⅝ |
| 4th | 27⅝ | 19⅜ | 24⅜ | 21¼ |

Cash dividends of $.12½ a share were declared for each quarter in 1977 and $.11 a share each quarter in 1976.

## Report of Ernst & Ernst, Independent Auditors

Shareholders and Board of Directors
McDonnell Douglas Corporation
St. Louis, Missouri

We have examined the consolidated balance sheet of McDonnell Douglas Corporation and consolidated subsidiaries as of 31 December 1977 and 1976, and the related consolidated statements of earnings, shareholders' equity and changes in financial position for the years then ended. Our examinations were made in accordance with generally accepted auditing standards and, accordingly, included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

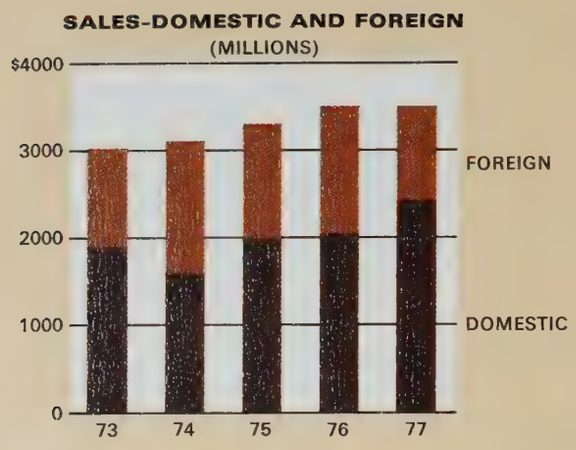
As more fully described in Note C to the consolidated financial statements, DC-10 tooling and production costs were charged to cost of sales based upon the estimated average unit cost for the program, resulting in the deferral of costs to be recovered over future sales. The realization of the deferred costs is dependent upon receipt of future orders significantly in excess of those received to date.

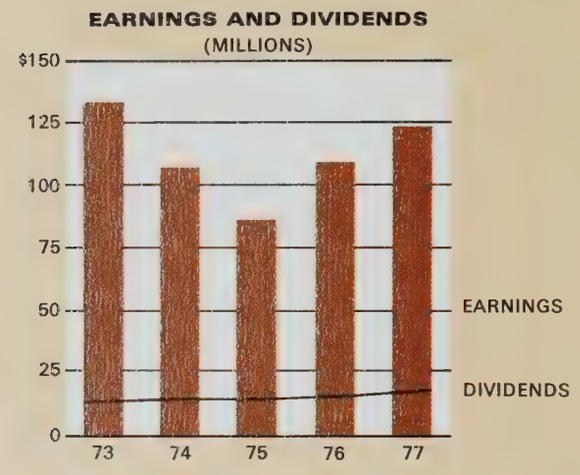
In our opinion, subject to the realization of the DC-10 deferred costs discussed in the preceding paragraph, the financial statements referred to above present fairly the consolidated financial position of McDonnell Douglas Corporation and consolidated subsidiaries at 31 December 1977 and 1976, and the consolidated results of their operations and the changes in their financial position for the years then ended, in conformity with generally accepted accounting principles applied on a consistent basis.

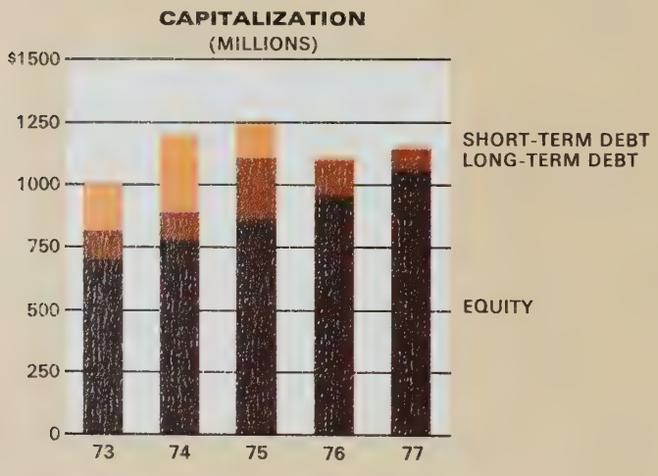
Ernst & Ernst

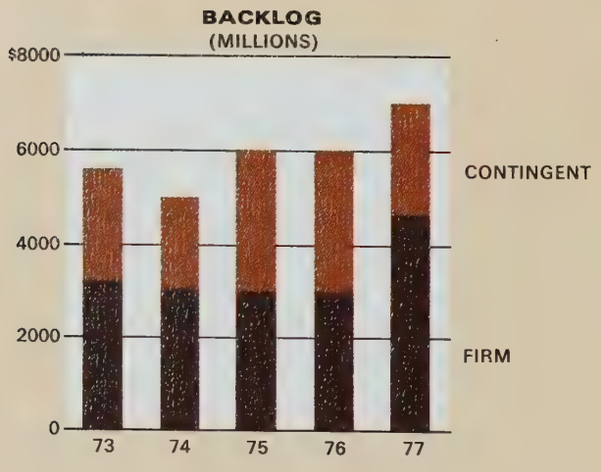
E&E

St. Louis, Missouri
26 January 1978




## ANALYSIS OF SUMMARY OF OPERATIONS

The Five Year Consolidated Financial Summary on the next page includes, as its first section, the Summary of Operations discussed herein. Reference is also made to Note B which presents a segregation of 1977 and 1976 operating revenues and earnings by industry segments.

Net earnings for 1977 were up approximately 13% from 1976 and 44% from 1975. The following compares 1977 operating results with 1976 and 1976 operating results with 1975, and comments upon the significant factors affecting reported earnings.

### 1977 Compared with 1976

Sales were about the same in total, as the decline in commercial aircraft sales was offset by increases in sales of other products. Other income increased largely due to interest earned on increased short-term investments and revenues from additional leased aircraft. Cost of products and services decreased slightly less than 2% while sales remained the same, resulting in an increase in gross margin of $52 million. Fluctuations occur in sales volumes and margins on the many programs in process each year and the lower gross margin on commercial aircraft programs (caused by lower production and delivery rates) was more than offset by the increase in military aircraft and missile programs. Research and development increased due to the development of new versions of commercial transport aircraft. Administrative and general expenses increased because of higher wage rates and benefits and general price increases, but also because of higher depreciation and other costs related to aircraft leased to customers. Interest expense declined as a result of reductions in borrowings. Income taxes increased due to higher pre-tax income for the year and higher effective tax rates (see Note G for detail explanation).

### 1976 Compared with 1975

Sales increased 9%, reflecting a continued increase in military aircraft programs, partially offset by the previously anticipated decline in DC-10 commercial aircraft deliveries. Cost of products and services increased slightly more than sales, resulting in a small decline in the ratio of gross margin on sales. While fluctuations occurred in sales volumes and margins on the many programs in process during these years, the excess production costs charged off on the DC-10 program alone more than accounted for the decline in the gross margin ratio for the year. Research and development decreased reflecting a curtailment of expenditures for new or improved commercial aircraft. Interest expense declined as a result of lower interest rates and the reduction of debt. Income taxes increased due to higher pre-tax income for the year and higher effective tax rates.

# FIVE YEAR CONSOLIDATED FINANCIAL SUMMARY

| | YEARS ENDED 31 DECEMBER | 1977 | 1976 | 1975 | 1974 | 1973 |
|---|---|---|---|---|---|---|
| | | | *Dollars in millions, except as noted.* | | | |
| | **Summary of Operations** | | | | | |
| | Sales by class of products: | | | | | |
| 1 | Commercial aircraft | $ 682.9 | $1,029.9 | $1,312.7 | $1,374.0 | $1,334.5 |
| 2 | Military aircraft | 2,127.3 | 1,920.8 | 1,406.3 | 1,180.9 | 1,053.0 |
| 3 | Space systems and missiles | 595.7 | 482.7 | 454.5 | 450.0 | 562.4 |
| 4 | Computer services, electronics and other | 138.9 | 110.3 | 82.2 | 70.1 | 52.7 |
| 5 | Total sales | 3,544.8 | 3,543.7 | 3,255.7 | 3,075.0 | 3,002.6 |
| 6 | Cost of products and services | 2,914.3 | 2,965.3 | 2,720.5 | 2,480.8 | 2,389.1 |
| 7 | Research and development | 123.9 | 105.6 | 132.2 | 139.5 | 142.8 |
| 8 | Interest and debt expense | 10.1 | 23.9 | 40.3 | 50.6 | 25.2 |
| 9 | Income taxes | 93.4 | 70.8 | 40.1 | 70.6 | 97.1 |
| 10 | Net earnings | $ 123.0 | $ 108.9 | $ 85.6 | $ 106.7 | $ 133.3 |
| 11 | Earnings per share *(in dollars)* | $3.20 | $2.85 | $2.27 | $2.77 | $3.36 |
| 12 | Earnings as % of sales | 3.47% | 3.07% | 2.63% | 3.47% | 4.44% |
| 13 | Earnings as a % of beginning equity | 13.01% | 12.85% | 11.09% | 15.48% | 23.06% |
| 14 | Cash dividends declared | $ 18.4 | $ 16.1 | $ 14.5 | $ 14.7 | $ 14.3 |
| 15 | Cash dividends declared per share *(in dollars)* | $.50 | $.44 | $.40 | $.40 | $.38 |
| | **Financial Position on 31 December** | | | | | |
| 16 | Current assets | $2,018.3 | $1,721.8 | $1,813.6 | $1,807.2 | $1,574.1 |
| 17 | Current liabilities | 1,332.2 | 1,046.3 | 1,115.1 | 1,349.4 | 1,180.7 |
| 18 | Working capital | 686.1 | 675.5 | 698.5 | 457.8 | 393.4 |
| 19 | Other assets | 196.7 | 165.1 | 144.3 | 153.8 | 138.3 |
| 20 | Facilities (net) | 249.6 | 237.7 | 243.6 | 254.2 | 259.9 |
| 21 | Deferred charges | 2.9 | 5.0 | 6.3 | 10.5 | 15.2 |
| 22 | Total assets less current liabilities | 1,135.3 | 1,083.3 | 1,092.7 | 876.3 | 806.8 |
| 23 | Long-term debt | 79.5 | 138.0 | 245.7 | 104.0 | 117.8 |
| 24 | Shareholders' equity | $1,055.8 | $ 945.3 | $ 847.0 | $ 772.3 | $ 689.0 |
| 25 | Shareholders' equity per share *(in dollars)* | $28.53 | $25.73 | $23.23 | $21.31 | $18.54 |
| | **General Information** | | | | | |
| 26 | Expenditures for facilities (net) | $ 54.8 | $ 40.9 | $ 33.1 | $ 35.0 | $ 33.1 |
| 27 | Depreciation of facilities | $ 43.0 | $ 41.2 | $ 43.7 | $ 40.7 | $ 41.4 |
| 28 | Floor area, in millions of gross square feet | 25.2 | 24.8 | 24.3 | 27.5 | 27.7 |
| 29 | Shares outstanding on 31 December *(in millions)* | 37.0 | 36.7 | 36.5 | 36.2 | 37.2 |
| 30 | Shareholders of record on 31 December | 62,432 | 66,637 | 72,765 | 72,672 | 68,588 |
| 31 | Personnel on 31 December | 61,577 | 57,867 | 62,830 | 70,739 | 78,799 |
| 32 | Payroll | $1,079.5 | $1,010.0 | $ 992.6 | $1,082.6 | $1,105.8 |
| 33 | Incentive compensation reserve | $ 27.1 | $ 26.7 | $ 27.8 | $ 30.6 | $ 30.5 |
| 34 | Firm backlog on 31 December | $4,626.8 | $2,988.1 | $2,951.8 | $3,199.8 | $3,509.1 |

*Firm backlog excludes (a) government orders not yet funded to us, (b) government orders being negotiated as continuations of authorized programs and (c) commercial orders subject to contingencies. Contingent backlog is (a) plus (b) plus (c), and was approximately $2,370,886,000. Total backlog is firm plus contingent backlog, and was approximately $6,997,686,000 on 31 December 1977 and $5,901,080,000 on 31 December 1976. The firm backlog at 31 December 1977 was 35% commercial and 65% government business, while total backlog was 34% commercial and 66% government business. Customer options are not included in backlog.*

MCDONNELL DOUGLAS CORPORATION

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**Transfer Agents:**

Shareholder Records Department, McDonnell Douglas Corporation; St. Louis Union Trust Company; The Chase Manhattan Bank, New York

**Registrars:**

St. Louis Union Trust Company; Chemical Bank, New York

**Stock Exchanges:**

McDonnell Douglas Corporation common stock is listed on the New York, Pacific Coast, Brussels and Amsterdam Stock Exchanges.

**Form 10-K and McDonnell Douglas Finance Corporation annual report:**

**Upon written request of any shareholder to Bryson R. Younger, Manager-Shareholder Records, McDonnell Douglas Corporation, P.O. Box 516, St. Louis, Missouri, 63166, MDC will furnish without charge a copy of its most recent Annual Report on Form 10-K filed with the Securities and Exchange Commission. The separate MDFC annual report can be requested in the same way.**

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Artist's concept of DC-9 Super 80,
newest version of MDC's popular twin-jet.

MCDONNELL DOUGLAS CORPORATION

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